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A RATIONAL THERAPY APPROACH TO  
COUNSELING UNDERACHIEVERS

by

HARVEY W. ZINGLE

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES  
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE  
OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

EDMONTON, ALBERTA  
JULY, 1965





UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled A Rational Therapy Approach to Counseling Underachievers, submitted by Harvey W. Zingle in partial fulfilment of the requirements for the degree of Doctor of Philosophy.



## ABSTRACT

This dissertation is based upon Ellis' theoretical position that there is a relationship between a person's irrational beliefs and negative emotion and disturbance. From this theoretical formulation was developed the hypothesis that underachieving students would show significant increase in marks when treated by Ellis' rational-emotive therapy approach to counseling.

The underachieving students who participated in this study were assigned to one of four treatments: (1) Group A - rational-emotive therapy approach to counseling, (2) Group B - counseling as regularly done by the counselors at the cooperating school, with an emphasis on study skills, study schedules, etc. In addition, a letter was sent home as in Group C. (3) Group C - a "laggard student letter," which threatened the students with expulsion if they failed to improve their marks, was sent to the students and their parents by the administrators of the school, (4) Group D - no treatment.

The major experimental hypothesis tested was that subsequent to the experimental period the group counseled according to the rational-emotive therapy orientation (Group A) would show more (1) improvement in school marks and (2) reduction in degree or number of irrational beliefs than any of the other three groups.

To assess the results of the above criteria the differences between pre- and post-treatment scores were calculated on the



following measures:

1. Teacher assigned marks.
2. An irrational beliefs questionnaire.

Two important conclusions were drawn from the results:

(1) The group of underachieving students counseled according to the rational-emotive therapy orientation (Group A) showed significantly greater improvement than did the untreated group. However, as the rational-emotive therapy group (Group A) did not show significantly greater improvement in school marks than did either the group counseled by the more conventional approach to counseling underachieving students (Group B) or the group treated according to the "laggard pupil policy" (Group C) it was concluded that the first part of the hypothesis was only partially upheld.

(2) The group of underachieving students counseled according to the rational-emotive therapy orientation, along with the group of underachieving students who were treated according to the "laggard pupil policy" showed significantly greater reduction in irrational beliefs as measured by an "Irrational Ideas Inventory" than did the no treatment group. Again, as was the case with academic achievement, Group A did not significantly surpass either Group B or Group C and so the hypothesis that the group counseled by the rational-therapy orientation would decrease in irrational beliefs more than any of the other groups was only partially substantiated.



## ACKNOWLEDGMENTS

The writer wishes to express his appreciation to the following persons for their assistance during the development of this dissertation:

Dr. C.M. Christensen for his time, patience, consistent encouragement and helpful criticism; Dr. C.C. Anderson and Dr. F.J. Kelly for their theoretical suggestions; Dr. S. Hunka for his assistance with the statistical design; Professor A.J.B. Hough for his constructive criticism; Dr. B.T. Keeler for his assistance at the school; the teachers and pupils who assisted with, or participated in, the experiment; my mother and father for their assistance in marking and scoring of tests; my wife for typing the original manuscripts and especially for her constant encouragement; my son Wade for putting up with me.







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## CHAPTER I

### THE THESIS PROBLEM AND ITS BACKGROUND

In spite of the great need for educated citizens at all levels of work and in spite of the many opportunities for education which exist today, it is probably correct to say that at no time have so many students who possess the necessary ability and opportunity failed to attain the academic level of which they are capable (Warren, 1961).

We can predict, using tests of intellectual capacity, with only a small degree of accuracy the future achievement of a student and there is a growing recognition that prediction falls short of perfection for reasons other than measurement error (Sheldon and Landsman, 1950; Swenson, 1957). Thorndike (1963) cautions researchers not to conclude that the entire discrepancy between measures of aptitude and of achievement can be explained by modifiable features in the individual; however, there is a growing recognition that these factors must be assessed if predictive error is to be diminished appreciably.

The problem of academic underachievement, especially among the brighter segment of school students, has received much attention of late from psychologists, educators, and lay people. Educators, besides being apprehensive about the underachieving student per se, are concerned because they feel that standards are lowered by the ineffectual student who does very little work. Thus, most Canadian, as well as American school boards, are motivated to take some sort of action with







regard to these underachieving students.

Much research pertaining to academic underachievement has been carried out during the past few years. Most of the studies on underachievement can be classified into one of two types. The studies are concerned with either identifying the nonintellectual factors associated with underachievement or with showing that some method of dealing with the underachiever will increase his achievement. Several representative studies of both varieties of research are summarized below.

There has been little advance in isolating the nonintellectual factors associated with underachievement, particularly when efforts are made to predict future performance on the basis of these variables (Uhlinger and Stephens, 1960). For example, the hypothesis has long been held, especially by educators, that underachievement is a manifestation of maladjustment, almost by definition.

Previous studies, notably those of Berger and Sutker (1956), and Hoyt and Norman (1954), have failed to show any difference in overall adjustment among over-, under-, and moderate achievement students. Various biographic and demographic variables have likewise failed to show consistent relationships with achievement (Schultz and Green, 1953).

Uhlinger and Stephens (1960) conclude that the inability to relate actual achievement to measures of motivation to achieve has been most perplexing and vexing. Such a relationship is generally



assumed to exist; nevertheless, the data have failed to confirm it consistently. The studies which have supported the hypothesis (Burgess, 1956; Morgan, 1952) have been counterbalanced by those with contradictory results (McClelland et al., 1953; Uhlinger and Stephens, 1960).

Shaw (1962) used the Need Achievement scale of the Edwards Personal Preference Schedule, the McClelland Achievement Motivation Test and the French Achievement Scale to determine whether these widely used scales of need achievement would make appropriate differentiations between groups of high school students matched for ability but differing significantly in mean grade point average. From the negative results he concludes that the present need achievement scales are not predictive of academic attainment and he suggests that his negative findings combined with those of many other studies (Birney, 1958; Vogel, Baker and Lazarus, 1958) signify the need for a critical re-examination of need for achievement instruments (Bendig, 1957; Melikian, 1958).

It is readily apparent that there is a rather pronounced lack of consensus not only with regard to the methodological aspects of the achievement construct but also with regard to the conceptual aspects. Mitchell (1961), who questioned the concept of the achievement construct, performed an analysis of the factorial dimensions of the achievement motivation construct. He identified six factors: Academic Motivation and Efficiency (the only factor highly predictive of actual



academic performance), Wish-Fulfillment Motivation, Nonacademic Achievement Motivation, Self-Satisfaction, External Pressure to Achieve, and Imputed Generalized Motivation Without Attendant Effort. In addition to demonstrating that there are several varieties of achievement motivation, the results also indicated that tests and test items differed widely in their ability to measure any of the several facets of this complex variable.

Many methods of assisting the underachiever have been employed and considerable research attempting to evaluate the effectiveness of these methods has been done. The oldest and most common method of helping the underachiever is tutoring him in the subject area in which he is failing. In most cases this does not prove to be very effective (Baymur, 1958). A more modern and more scientific method of helping the underachiever is subjecting him to a program of training in methods of study or referring him to a reading clinic or to an English teacher who teaches a special course in remedial reading.

There are studies showing that training in study skills and reading helps some students in academic difficulty to a certain degree. Blake (1956), for example, reports that students who were required to participate in the University of Maryland study skill program, benefited academically. However, although the study is interesting in pointing out that training in study habits and reading skills may help students in academic difficulty, it does not show how much of the beneficial effect was due to actual remedial teaching and how much of





it was due to counseling, since the training program received included both features.

And the crucial question, here, is whether training in study skills and remedial instruction is the best kind of help the student in academic difficulty needs. This may not be so. Studies and observations of Kirk (1952), Kimball (1952), and Shaw and Grubb (1958) indicate that underachievement is not a surface phenomena that can be easily modified. Rather it is related to the basic personality matrix of the individual, a point which suggests the necessity of some kind of therapeutic experience if the individual is to improve in his achievement. The Sheldon and Landsman (1950) study validates the hypothesis that what underachievers need is to look to themselves rather than be tutored in study skills. They investigated the effectiveness of nondirective group therapy with some students in academic difficulty. For several years special classes were being held for these students to teach them mastery of reading and study skills. They chose as their subjects a group of twenty-eight freshmen, whose performance during their first semester was below expectation. These students were divided into two classes. One group was subjected to group therapy, which was conducted in a nondirective manner, and the other group was conducted in the traditional lecture-discussion method. The results of the study clearly showed that, with students in academic difficulty, nondirective group therapy sessions gave significantly better results than the classes conducted in the conventional lecture-





discussion methods.

Richardson and Perry (1956), Moore and Popham (1960), Watson (1961) also conclude that it is possible to identify underachievers and through counseling help them bring their level of achievement into line with their potential.

Serene (1959) experimented with very short-term counseling which involved a couple of interviews with the students and one interview with the parents, which he termed "motivational counseling." His object was to determine whether a program of appropriate counseling could bring about a closer relationship between ability and achievement. The results showed that the gap between intelligence and academic achievement was narrowed for the counseled group. Since this gap did not narrow in the case of the control group, it was concluded that the change brought about in the counseled group could be attributed to the program of counseling.

Other studies do not provide positive evidence of the effectiveness of counseling in the area of underachievement. Guthrie and O'Neil (1953) made a study to evaluate the effects of what they termed "dormitory counseling" on academic achievement. The subjects were second semester college freshmen who were divided into three groups matched as to degree of underachievement. Group I received fifteen minutes of individual counseling once a week for ten weeks; Group II was seen as frequently as group I but no attempt was made to counsel any student; Group III received no counseling. The



effectiveness of counseling was measured by the second semester grade point average of the student. The results showed that all of the groups made a slight improvement over the previous semester, but there were no significant differences among the final grades of the experimental and the two control groups. Patterson (1956) surmises that Guthrie and O'Neil obtained their negative results due to the superficiality and short duration of the counseling.

In a more recent study Calhoun (1956) attempted to assess the effects of a program of individual counseling\* on the academic accomplishments of underachieving students. He used two equivalent groups, one as the experimental group which was counseled, the other as the control group which was not counseled. At the end of the year, the results showed that the program of counseling did not bring about statistically significant improvement in achievement as measured by a standardized test battery. However, the school marks for the experimental group were significantly superior. The author believes the school marks to be the more sensitive indicator of the two measures since he assumes that the marks represent chiefly an assessment of current performance while the test scores reflect the total background. However, Calhoun's interpretation cannot be accepted without reservation. Because the teachers knew which students had been counseled, the distinct possibility that the teachers' marks were

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\*Calhoun fails to indicate the orientation of the counselors involved.



contaminated must be considered.

Although a great deal of research has been carried out, the problem of underachievement remains unclear. Many factors, including nonintellectual ones, are related to achievement, but researchers have had difficulty in isolating and measuring these factors. The difficulties encountered may be, to a large extent, due to the lack of adequate theory which would give structure to the factors studied and guide researchers in the isolation of more relevant factors.

If the problem of underachievement is not understood, it is not surprising that no definitely effective method of treating under-achievers has been developed. The various methods used to "help" underachievers have yielded contradictory results. Counseling of underachievers is one of the most widely used methods of helping the underachiever and so it has received considerable attention in recent years. No doubt different kinds of counseling have been tried, but rarely has the researcher specified his theoretical orientation. Thus it is possible that one type of counseling is more effective than another, but to determine which counseling approaches are effective it will be necessary to specify the techniques explicitly and to systematically use these techniques with experimental subjects. Counseling techniques based on a theoretical orientation would be advantageous in that a theoretical orientation would provide some understanding of behavioral change and would therefore permit the development of additional techniques.





The primary concern of this thesis is the evaluation of the effectiveness of Ellis' rational-emotive psychotherapy in increasing the achievement of underachievers. Ellis has developed specifiable counseling techniques based on a fairly definite theoretical orientation. In addition, Ellis and his colleagues have reported considerable success with their approach. It is a straightforward approach that would be feasible in schools if it proved effective.





## CHAPTER II

### THEORETICAL ORIENTATION

#### A. The Basic Tenets of Rational-Emotive Psychotherapy

Ellis (1962) hypothesizes that among adult humans, raised in a social culture, thinking and emoting are so closely interrelated that they usually accompany each other and act in a circular cause-and-effect relationship. He also hypothesizes that since man is a uniquely sign-, symbol-, and language-creating animal, both thinking and emoting tend to take the form of self-talk or internalized sentences; and that, for all practical purposes, the sentences that humans keep telling themselves are or become their thoughts and emotions.

This does not mean that emotion can under no circumstances exist without thought. It can, but only momentarily, and it is not sustained over a long period of time. To be sustained, the emotion must normally be bolstered by repeated ideas (Ellis, 1958, p. 37).

If the hypothesis that sustained human emotion results from or is directly associated with human thinking and self-verbalization is true, then it follows that one may control one's feelings by controlling one's thoughts. That is, a person may change the nature of his feelings from negative to positive (or neutral) by changing the internalized sentences or self-talk with which he largely created the feelings in the first place. Ellis' view of the role of the



therapist is:

...that by showing his patient how human thinking, and the emotions that are often associated with this thinking, can definitely be controlled or changed by parsing the phrases and sentences of which thoughts and emotions essentially consist, he can usually teach this patient to overcome his emotional disturbances (Ellis, 1962, p. 52).

In the course of rational therapy, the focus is largely on what is happening to the patient during the present and particularly on what he is telling himself about what is happening to him. His past history is briefly considered, and some important aspects of it may be related to his present behaviour, but this is only a small part of the therapy.

The main aim is to show the patient that any emotion that he now experiences is invariably preceded--usually the instant before he experienced this emotion--by a simple declarative sentence which he tells himself. And it is this sentence which sets up the emotional state (Ellis, 1960).

This internalized sentence is referred to by Ellis as the "B" step in the A-B-C theory of personality and emotional disturbance. This theory holds that it is rarely the stimulus, A which gives rise to a human emotional reaction, C. Rather it is almost always B- the individual's beliefs regarding attitudes towards or interpretation of A- which actually lead to his reaction, C. In rational psychotherapy, a considerable portion of the time during the therapeutic sessions is spent in showing the patient what his own internalized sentences, at B, specifically are, and how they must be irrational if they lead to





negative feelings.

So the main task of the rational psychotherapist is to attack any irrational links which may appear at "B". Like other therapists, however, he frequently resorts to the usual techniques of relationship, expressive-emotive, supportive, and insight-interpretive therapy. But he views these techniques as preliminary strategies whose main functions are to gain rapport with the client and to demonstrate how he originally became disturbed.

The rational therapist, furthermore, believes that most of the usual therapeutic techniques knowingly or unknowingly show the client that he is illogical and how he originally became so. They often fail, however, says Ellis (1958), to show the client how he is presently maintaining his illogical thinking and precisely what he must do to change it by building general rational beliefs and by applying these to practical problems of everyday life. Although most therapists, in one way or another, show the client that he is behaving irrationally, the rational therapist goes beyond this by directly attacking the client's general and specific irrational beliefs and also by trying to induce him to adopt more rational beliefs in their place.

Rational psychotherapy makes a concerted attack on the disturbed individual's irrational positions in two main ways: (a) the therapist serves as a frank counter-propagandist who directly contradicts and denies the self-defeating propaganda and superstitions which the client has originally learned and which he is now self-propagandistically perpetuating. (b) The therapist encourages, persuades, cajoles, and at times commands the client to partake in some kind of activity which itself will act as a forceful counter-propagandist agency against the



nonsense he believes. Both these main therapeutic activities are consciously performed with one main goal in mind: namely that of finally getting the client to internalize a rational philosophy of living just as he originally learned and internalized the illogical propaganda and superstitions of his parents and his culture (Ellis, 1958, p. 45).

The rational therapist, then, believes that it is the irrational ideas which the client has adopted that make him behave in a disturbed fashion. It is the therapist's function not only to show the client that he has these irrational ideas but to convince him to exchange them for more rational ideas. It may be that because of the ease with which the disturbed client is threatened, that it is useful at first to approach the client in a supportive, permissive manner. But the rational therapist does not delude himself that these relationship-building techniques will get at the basic irrational premises of the client.

What, then, are some of the major illogical ideas which, when originally held and later perpetuated by men and women in our civilization, inevitably lead to self defeat and disturbance? It would be presumptuous to attempt to examine all of these irrational beliefs and, therefore, only a few will be listed. Ellis (1962) has outlined eleven major illogical and irrational beliefs which he feels are presently ubiquitous in Western civilization and these have been the irrational beliefs specifically considered in this study. They are (Ellis, 1958, p. 40-41; Ellis, 1962, p. 60-88):

1. The idea that it is a dire necessity for an adult to be





loved or approved by everyone for everything he does--instead of his concentrating on his own self-respect, on winning approval for necessary purposes (such as job achievement), and on loving rather than being loved.

2. The idea that one should be thoroughly competent, adequate, intelligent, and achieving in all possible respects if one is to consider oneself worthwhile -- instead of the idea that one should do rather than always try to do well and that one should accept oneself as a quite imperfect creature, who has general human limitations and specific fallabilities.

3. The idea that certain people are bad, wicked, or villainous and that they should be severely blamed and punished for their villainy -- instead of the idea that certain acts are inappropriate or antisocial and that people who perform such acts are invariably stupid, ignorant, or emotionally disturbed.

4. The idea that it is awful and catastrophic when things are not the way one would like them to be, and that one should certainly try to change or control conditions so that they become more satisfactory, but that if changing or controlling uncomfortable situations is impossible, one had better become resigned to their existence and stop telling oneself how awful they are.

5. The idea that human unhappiness is externally caused and that people have little or no ability to control their sorrows and disturbances -- instead of the idea that virtually all human unhappiness



is caused or sustained by the view one takes of things rather than the things themselves.

6. The idea that if something is or may be dangerous or fearsome one should be terribly concerned about it and should keep dwelling on the possibility of its occurring -- instead of the idea that if something is or may be dangerous or fearsome one should frankly face it and try to render it nondangerous and, when that is impossible, think of other things and stop telling oneself what a terrible situation one is or may be in.

7. The idea that it is easier to avoid than to face certain life difficulties and self-responsibilities -- instead of the idea that the so-called easy way is invariably the much harder way in the long run and that the only way to solve difficult problems is to face them squarely.

8. The idea that one should be dependent on others and needs someone stronger than oneself on whom to rely -- instead of the idea that it is usually far better to stand on one's own feet and gain faith in oneself and one's ability to meet difficult circumstances of living.

9. The idea that one's past history is an all-important determiner of one's present behavior and that because something once strongly affected one's life, it should indefinitely have a similar effect -- instead of the idea that one should learn from one's past experiences but not be overly-attached to or prejudiced by them.

10. The idea that one should become quite upset over other





people's problems and disturbances -- instead of the idea that other people's deficiencies are largely their problems and that putting pressure on them to change is usually least likely to help them do so.

11. The idea that there is invariably a right, precise, and perfect solution to human problems and that it is catastrophic if this perfect solution is not found -- instead of the idea that one should first make an effort to think of several possible solutions and to choose, from these alternatives, the one that is most practical and feasible.

To give a somewhat more concrete idea of the procedures used in counseling by a rational therapist approach, a case study is provided. The boy, used as an illustration here, was one of the under-achieving students who participated in this study.

#### An Illustrative Case

John is one of five children; male; age 17. He was born in Holland but came to Canada with his family when he was four years old. His father is a piano tuner and his mother is a housekeeper. The test data available in John's cumulative record indicate that he is a fairly bright lad. Most of his D.A.T. scores are in the eighty to ninety percentile category. I.Q. scores on the Otis, SCAT and Henmon-Nelson tests indicate an I.Q. in the 125-130 category. In elementary school, John was an honors student. In Junior High School, his ranking dropped somewhat. At the time he came to counseling, after three months in grade XI, he was failing in four out of eight subjects and





his average was fifty-two.

John is very small for his age and looks quite young for his grade. He was always neat and well dressed. Rapport was readily established and right from the first interview he started to talk about his problems.

During the first and second interviews, it became evident that one of John's problems was his relationship with his father. During the third interview the following dialogue between John and the counselor occurred. It illustrates well the use of the A-B-C theory of personality. The excerpts from actual sessions are slightly abridged, grammatically clarified, and cleared of all identifying data. Although verbatim transcripts would add more of a flavor of what happens in rational counseling, they would become unwieldy, and unless carefully annotated, somewhat unclear.

John: It's not me that's unhappy about my marks but someone else. Dad pushes me around...gets me sore.

Counselor: You think you are unhappy because your dad mistreats you?

John: Why? Yes.

Counselor: But you aren't unhappy for the reason you think you are.

John: But..., why am I unhappy then?

Counselor: It's very simple; in fact it's as simple as A,B,C. A, in this case is the fact that your dad becomes extremely angry and



unreasonably demanding of you. Let's assume that your dad is, in fact, unreasonable.

John: He is; he certainly is.

Counselor: O.K., then, let's assume that he is unreasonable, and call that A. Now, C is your unhappiness. You see A and C and you assume that A, his being unreasonable causes your unhappiness, C. But it doesn't.

John: It doesn't? What does then?

Counselor: B does.

John: What's B?

Counselor: B is what you say to yourself when your dad becomes angry and unreasonably demanding of you.

John: What I say to myself? But I don't say anything to myself. He just acts unreasonably and it makes me angry.

Counselor: You do. You couldn't possibly be unhappy if you didn't. The only sort of thing that can make you unhappy from outside yourself is something hurting you physically. But as this is not the explanation in this instance, then obviously, you must be telling yourself something to make you unhappy.

John: That seems funny to me. I just don't think I say anything to myself in these instances.

Counselor: You must. Just think back to a specific time when you got angry at your dad; what did you say to yourself?

John: Well, I guess I must have said something.



Counselor: I'm sure you did, but what was it?

John: Maybe I told myself that it was awful that my dad treated me like that, and I'm not really a bad guy, and you know, things like that.

Counselor: That's right. And that, what you told yourself, was B. And it's always B that makes you unhappy in situations like this.

John: Well, if it is, how does knowing that help me? What shall I do?

Counselor: I want you merely to try and figure out, the next time your dad makes you angry, what your internal sentences are. Do you think you can do that?

John: Oh! I suppose I can try. All I have to do is watch what I am saying to myself.

Counselor: Yes, just that, and try to remember some of the sentences and we'll discuss them at our next session.

When John came in for his fourth interview, the counselor asked him if he had done his homework. He said he had, but that he had some difficulty analyzing his internal sentences. However, following some discussion it became clear to John that what he had been saying to himself were sentences full of self-pity.

The counselor then showed John how (in this instance and also in many others in his life) to observe as soon as he began to feel strong negative emotion, exactly what he had been telling himself just





prior to this negative emotion. Secondly, he was encouraged to start tracing his internal verbalizations to their sources or assumptions. Thus, in the event illustrated above, the ideas behind his becoming extremely disturbed when his father made unreasonable demands on him were: (1) It is absolutely necessary that his father must love him; (2) Because he is a nice fellow, there is no reason why his father shouldn't approve of him; and (3) It is unfair and catastrophic that his father does not approve of and love him like other fathers approve of and love their sons.

When John had observed, as a result of the discussion, the philosophic beliefs behind his being angry and hurt, he was taught by the counselor to question, challenge, and attack the irrationality of these beliefs. Furthermore, not only was he to challenge and attack his irrational assumptions, but he was also to change them. He was to keep telling and convincing himself that it was not absolutely necessary that his father show a deep love for him, and that not being approved by his father might well be inconvenient, but that it was hardly catastrophic.

In this manner, John was shown how to observe, track-down, question, and change some of the irrational beliefs behind his disturbance. The particular irrational belief, illustrated above, is only one of several to which John hung on tenaciously. During the course of the interviews, some of these irrational beliefs became evident. Each of these was, in turn, dealt with by the counselor, who





applied the direct methods of confrontation, confutation, de-indoctrination, and re-education.

In this manner, by attempting to teach John some of the general rules of rational living, the counselor tried to go beyond John's immediate problems and to help provide him with a generalized way of problem solving or thinking that would enable him to deal effectively with almost any future situation that might arise.

During the eighth and last interview John explained that he no longer hated his father and that his father's unreasonable demands no longer upset him. Perhaps the father did mistreat the family, but, after all, he did work hard and supplied a good livelihood for the family. John also felt that he was working harder at his school work. He wasn't doing it to please his father, but he was working hard because he needed good marks to get into the Faculty of Engineering at the University. John's shyness, which resulted from his irrational idea that one should be thoroughly competent and achieving if one is to consider oneself worthwhile, also diminished noticeably when he was convinced of the irrationality of this belief.

#### B. Relationships Between Ellis' Theory and Some Other Theories

Although Ellis' theory is sufficiently developed to permit its application in a counseling setting, it remains somewhat vague. It is clear, for example, from Ellis' writings why irrational ideas lead to



intensified, sustained negative emotion\* whereas rational ideas do not. The nature of the relationship between thinking and emotionality may be clarified by examining the similarities between Ellis' theory and others, for instance: Festinger (1952) and Luria and Yudovich (1959).

A number of authors (McGill, 1954; Schachter and Singer, 1962; Hebb, 1955; Rokeach, 1960) during the past few years have proposed that human emotion has cognitive determinants to some extent. For example, Ellis cites Cobb's definition of emotion as "(1) an introspectively given affect state, usually mediated by acts of interpretation; (2) the whole set of internal physiological changes, which help the return to normal equilibrium between the organism and its environment, and (3) the various patterns of overt behavior, stimulated by the environment and implying constant interactions with it, which are expressive of the stirred up physiological state (2) and also the more or less agitated psychological state (1)" (Ellis, 1962, p. 39). Ellis' (1962) own statement is that "much of what we call emotion is nothing more or less than a certain kind-a...strongly evaluative kind- of thought" (p. 41).

Ellis' emphasis on the role of thought, self-verbalizations, and irrational beliefs in emotions is not inconsistent with the many

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\*Ellis does not explicitly define negative emotion. He indicates that negative emotions lead to self-defeating behavior and general discomfort or dissatisfaction.





authors who have pointed to cognitive determinants. Ellis does not, however, offer an explicit explanation of the link between irrational beliefs and what he calls negative emotions. Festinger's theory of cognitive dissonance and Luria's analysis of speech as a regulator of behavior provide some basis for establishing a plausible linkage.

Let us assume with Festinger (1954) and Nissen (1954) that there is a motivation in the human organism to hold consistent opinions, beliefs, and ideas about the world in which he lives. When an individual experiences any dissonance between what he believes and reality (whether the reality is what others think or do, what is encountered experientially, or what others have told him) he strives to reduce this dissonance.

But persons are not always successful in explaining away or rationalizing inconsistencies to themselves. For one reason or another, attempts to reduce dissonance may fail. The inconsistency then simply continues to exist. Under such circumstances there is psychological discomfort. This sort of inconsistency Festinger (1957) has labelled cognitive dissonance and he hypothesizes that the existence of dissonance, being psychologically uncomfortable (Ibid., p. 2), will motivate the person to reduce the dissonance and achieve consonance.

How, then, does Festinger's theory of cognitive dissonance relate to Ellis' hypothesis that irrational thinking leads to negative emotions? Let us suppose that an individual believes an irrational, illogical idea. If Festinger's assumption is correct, the individual





will attempt to check his belief against one of the above mentioned forms of reality. Because the belief is irrational, he will likely find it inconsistent with reality and, therefore, he will experience psychological discomfort. If what Festinger has termed psychological discomfort is synonymous with what Ellis has termed negative emotion, then Festinger's theory explains how irrational beliefs will lead to negative emotions.

Another explanation, which shows the linkage between irrational beliefs and negative emotionality, comes from an examination of Ellis' case studies. The individual's beliefs lead him to make certain decisions or come privately to certain conclusions which, in one way or another, lead to behavior that causes negative emotion.

Let us take as an example the case, cited by Ellis (1962, p. 211 ff.), of a husband and wife who, after having been married for seven years, were fed up with each other and thought it useless going on. An analysis of their problem shows that the husband had certain irrational expectations and beliefs about marriage. These beliefs led him to act in a certain manner, and his actions caused reactions from his wife. In turn, the husband's reactions to his wife's behavior led to further actions on the part of both husband and wife and these actions led to negative emotion. And so the irrational beliefs indirectly led to negative emotion. Festinger (1957) is obviously aware of the importance of this sort of experience when he suggests that "cognition will be governed and determined, at least in part, by the actions which



a person takes" (Ibid., p. 128). What he means here is that a person's actions, by bringing him into certain kinds of contact with the environment, will expose the person to new experiences that will be cognized. If a circumstance should arise such that some cognitive elements do not fit or are not in line with a person's actions, there will arise negative emotion.

Both of the above suggestions, showing the linkage between irrational beliefs and negative emotionality, are complementary ways of explaining the same behavioral phenomena. However, although they both show how irrational beliefs may lead to negative emotion, they do not explain how the negative emotion is sustained. It has already been indicated that emotion, whether it be negative or positive, to be sustained must normally be bolstered by repeated ideas (Ellis, 1958, p. 37).

Luria and Yudovich (1959) underline this point when they say that "...speech, the basic means of communication, becomes also a means of deeper analysis and synthesis of reality, and more fundamentally important, 'a higher regulator of behavior" (1959, p. 14). By using speech for himself, man alters the relative strength of the stimuli acting upon him and adapts his behavior to the influences thus modified. Detailed experimental studies, cited by Luria (1961), show that this modifying of the "rule of force" by speech associations may, in certain conditions, become not only extremely stable but also very deep-rooted and may extend its influence to the subject's non-voluntary reactions.





Furthermore, the fact that any process of establishing new links uses as intermediary other links based on speech - or in Pavlovian terminology -- second signalling -- system links -- plays a decisive part. These are the links that are incorporated into man's orienting activity, that abstract and systematize the signals acting on the organism and inhibit its direct-impulse reactions. This process creates a new information-system within which each signal presented to the subject now operates.

And so, whereas in animals, eliminating the reinforcement means the gradual extinction of the link established, no such phenomena is observed in man. Having formulated a given rule, man no longer needs the constant external reinforcement. The coincidence of the reaction with the behavior-rule as formulated now becomes the reinforcement; thus man's behavior takes on the character of "the highest self-regulating system" described by Pavlov.

Thus, although originally a man becomes negatively emotional by one of the methods above, he can sustain his negative emotion by his internal self-verbalizations.

What happens then is somewhat as follows: The individual makes statements to himself which, in the present context of his life, make him unhappy or subject to negative emotion. Then, even though the original cause of the negative emotion is removed, the individual is able to sustain this state by bolstering it with internal speech.

The above attempt (explaining how and why irrational ideas





lead to intensified, sustained, negative emotion whereas rational ideas do not) represents one line of reasoning which may be taken. Admittedly it is not a rigorous approach, but it does add plausibility to Ellis' rational-emotive theory. Furthermore, whether or not Ellis' theoretical formulations can stand up to rigorous analysis is not crucial to this study. His techniques are explicit and can therefore be experimentally tested.



## CHAPTER III

### EXPERIMENTAL DESIGN

#### The Sample

Subjects were chosen from 923 grade 10 and 11 students attending Jasper Place Composite High School, Edmonton, Alberta. Students attending this High School represent a wide range of achievement and socio-economic status.

#### Identification of Underachievers

The first step in the study was to identify the underachieving students. The Henmon-Nelson Test of Mental Ability (Form A) was administered to all 923 of the students in the school at the beginning of the school year. Since the distribution of the I.Q. scores was positively skewed in each of the three grades, each of the distributions was normalized and standard T scores with a mean of 50 and a standard deviation of 10 were calculated.

Then, grades received on the first report card (November) were summed for each student and the distribution of the aggregate scores for each grade was normalized and standard score equivalents calculated.

The underachieving student was then defined as one whose T score for aggregate achievement was 13\* or more points below the T

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\* A deviation score of 13 is an arbitrary number. It was used because it led to sufficient subjects for the purposes of the study.



score derived from his Henmon-Nelson I.Q. score.\*

As a result of this procedure, 87 or approximately nine percent of the 923 students for whom records were available were identified as underachievers. Of these, 60 participated in the study. The breakdown of underachievers by sex and grade is presented in Table I. It is interesting to note that of the 87 underachieving students only 29 were girls and 58 were boys as this ratio of boys to girls among underachievers is consistent with the findings of Ford (1957), Heimann and Schenk (1954) and Thorndike (1963).

TABLE I

NUMBER OF STUDENTS PARTICIPATING IN THE STUDY

Grade	Total Number of Students	Underachievers Identified			Underachievers Who Participated in the Study		
		Boys	Girls	Total	Boys	Girls	Total
10	349	18	16	34	12	12	24
11	322	26	9	35	20	4	24
12	252	14	4	20	8	4	12
TOTAL	923	58	29	87	40	20	60

\*The correlation between aggregate achievement and Henmon-Nelson I.Q. scores was .80 for this sample.





### Assignment of Subjects to Treatment and Control Groups

The students identified as underachievers were randomly assigned to four groups after being matched on the following six variables:

- (a) Degree of underachievement which was defined in this study in terms of the difference between the aptitude score in normalized T score form and the aggregate achievement score in normalized T score form.
- (b) Scholastic aptitude which was measured by the student's normalized T score on the Henmon-Nelson test of intelligence.
- (c) Actual academic achievement as measured by normalized T scores of aggregate achievement.
- (d) Grade.
- (e) Sex.
- (f) Socio-economic status as estimated by the Elley (1961) abridgement of the Gough (1949) "Home Index Scale." Using the questionnaire approach, Gough produced a "Home Index Scale," suitable for educational research with large numbers, easy to administer and simple to score. In his own words, it was ... "based largely upon a re-analysis and re-wording of items in the Sims Score Card and the American Home Scale, with the addition of certain original items" (1949, p. 53). The scale consisted of twenty-one items, to be answered "yes" or "no" and it showed a re-test reliability of .989



on college students. According to the Flesch readability standards (Flesch, 1948), it is well within the scope of the average junior high school student. Elley (1961), after performing an item analysis on the results of a preliminary administration of his abridgement of the Gough scale, retained fourteen items from the original scale and six of his own. A student's score on this scale (see appendix A) is merely the number of questions answered in the affirmative. Research (Elley, 1961) using this new form of the Home Index Questionnaire, indicates that the instrument correlates with achievement.

The intercorrelations among the matching variables are presented in Table II. With the exception of the correlation coefficient between scholastic aptitude and actual achievement the correlation coefficients are small.

After sets of four students, as alike as possible on the six matching variables were made up, each of the members of the set was assigned at random to one of the four treatment groups. Randomization was achieved by using a table of random numbers.

In attempting to find sets of four subjects as alike as possible on the six matching variables, some subjects had to be rejected. Thus, after the procedure of matching, 60 students with 15 in each of four groups were included in the study and 27 were rejected.





TABLE II

INTERCORRELATIONS OF THE MATCHING VARIABLES FOR  
THE EIGHTY-SEVEN UNDERACHIEVING STUDENTS

	a	b	c	d	e	f
(a) Degree of Underachievement		.15	-.33	-.00	.12	-.06
(b) Scholastic Aptitude			.88	-.14	-.31	-.05
(c) Actual Achievement				-.13	-.35	-.01
(d) Grade					.22	.11
(e) Sex						-.02
(f) Socio-Economic Status						



Matching with regard to grade and sex was straight-forward as each group was assigned identical numbers of grade and sex representatives. Each group contained 10 boys and 5 girls. The grade composition was as follows: 6 from Grade X, 6 from Grade XI, and 3 from Grade XII.

A comparison of the four experimental groups and the reject group on the remaining four matching variables is possible from the data presented in Table III. Computation of the Hartley Maximum F-Ratio Test for Heterogeneity of Variance and of a one-way analysis of variance yielded no significant differences among the variances or means.\*

Thus after the procedure of matching, 60 students were included in the study with 15\*\* students in each of the four groups which were in turn comparable in terms of degree of underachievement, scholastic aptitude, academic success, grade, sex, and socio-economic status. The groups were then assigned to different treatments as follows:

Group A - rational-emotive therapy approach to counseling (counseling done by the author of the study).

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\*Analysis of variance data are presented in Appendix B.

\*\*At the onset of the study there were 21 in each group. When a member of a set dropped out of school the remaining members of the set were excluded from the study. This attrition resulted in 15 intact sets.



TABLE III

MEANS AND STANDARD DEVIATIONS OF THE FOUR TREATMENT  
AND ONE REJECT GROUPS FOR THE MATCHING VARIABLES

	A	B	C	D	Reject	Significance of difference
Degree of Underachievement						
Mean	17.07	18.60	18.67	16.73	16.44	N.S.
S.D.	4.54	3.28	4.03	3.92	2.99	N.S.
Scholastic Aptitude						
Mean	57.87	58.07	60.80	57.87	56.48	N.S.
S.D.	7.62	8.15	6.53	5.52	8.27	N.S.
Actual Academic Achievement						
Mean	40.80	39.47	42.13	41.13	40.04	N.S.
S.D.	7.45	8.91	7.74	6.43	8.16	N.S.
Socio-Economic Status						
Mean	12.93	10.93	10.93	11.07	11.15	N.S.
S.D.	2.72	3.13	2.95	2.81	3.01	N.S.





Group B - counseling as regularly done by the Jasper Place Composite High School counselors, with an emphasis on study skills, study schedules, etc. Also a letter was sent home as in Group C.

Group C - laggard student letter (sent out by the administrators of the school).

Group D - no treatment.

#### Description of Types of Treatments Used in the Study

The experimental period started following the distribution of the first report cards, which was done in mid-November. The first two weeks were used to identify the underachieving students and to administer the pre-counseling tests to all the participants in the study. The treatments were begun in the first week in December.

#### Treatment Given to the Students in Group A

Students in this group were counseled by the present writer who used a rational-emotive therapy approach. The technique is explained in Chapter II. Appointments were scheduled for approximately ten day intervals and usually lasted for between twenty-five and thirty-five minutes. The appointments were scheduled for Tuesdays and Thursdays, and if a student was unable to keep an appointment, a re-appointment was made for the next day. Approximately thirty per cent of the appointments were missed for a variety of reasons. The most common reason for missing appointments was absence from school, but a close second was classroom examinations. The average number of



interviews during the experimental period December 1 to March 17, was approximately seven. Most students were interviewed eight times as was originally planned. One student who was absent from school a great deal of the time because of ill health and the death of his father kept only three of the sixteen appointments scheduled.

During the first interview, the students were told that the author of this study was going to be counseling at the school on Tuesdays and Thursdays for the next few months. They were also told that they had been assigned to his counseling load and that, with their permission, re-appointments would be made for them at ten day intervals by the secretary. All except one of the students seemed very pleased with this procedure. The one student who did not feel he wanted automatic re-appointments indicated at the close of his second interview that he thought it was a "pretty good idea." Also, during the first interview, each of the counselees was given the assurance that the content of the interviews would be completely confidential.

After the conclusion of each interview, the counselor summarized the salient points of the conference and kept a file on each student.

#### Treatment Given to Students in Group B

Students in this group were counseled by the counselors in the school. Just as in Group A, appointments were scheduled for approximately ten day intervals and usually lasted from twenty to thirty-five





minutes. The percentage of appointments missed was also about the same as in Group A. The average number of interviews during the experimental period was approximately seven.

As the members of this group were counseled by five different counselors, there is no doubt that there were distinct differences in approach and emphasis. However, to help bring about a measure of uniformity the counselors met with the author of this study prior to the first interview to discuss procedures.

It was decided that the major aim of the first session would be to inform the students of the discrepancy between their abilities and accomplishments and to motivate them to eliminate or reduce the gap. Besides informing the students that they were underachievers and defining the concept for them, an attempt was made to motivate them to do something about it.

During the following sessions, it was brought to the attention of the students that the grades that they were getting in high school might mean more to them in the future than they realized today since more and more institutions of higher education are admitting students on the basis of their high school standing. They might also have better chances of getting jobs in their chosen field of interest with a better high school record. It was pointed out to them that it would be worth their efforts to try to improve their grades by working hard the remainder of the year and that this was really not expecting too much of them as they were merely being challenged to measure up to





their own capacity. To aid them in their efforts, the students were given literature on "How to Study." In addition, the suggestions in the literature were discussed in the following sessions. Furthermore, the students were aided in planning a study schedule and encouraged constantly to use it. Most of the students brought back their schedules to the counselors for approval. When the students chose to discuss problems with regard to study, their courses, or their teachers, these were discussed. Usually the students were able to resolve their problems by themselves, but if they found difficulty in doing this, they were given advice by the counselor. Also, during the sessions, the students were encouraged to think about the future, their future education and vocation. Whenever the students requested test data which were available in the cumulative records, they were presented and interpreted to the students. When test data were not available, tests were administered prior to the succeeding counseling session.

In addition to the above treatment, members of this group were also given the same treatment as members of group C.

#### Treatment Given to the Students in Group C

Students in this group were treated in the manner outlined by the Jasper Place Public School Board Policy Handbook. The section of the handbook which pertains to underachieving students is entitled section IV-J, Indolent Pupils (High School). Some pertinent sections follow:



A high school student is entitled to education at public expense provided he puts forth a serious effort to profit from that education. In 1958 the cost per senior high school pupil in Jasper Place was \$450.00 and there was difficulty in finding accommodation for all who sought admission. The public cannot afford to provide such service to pupils who take an indifferent attitude towards their responsibility in providing a good return on the investment

In implementing the above policy, the following statements will apply:

(1) Our concern is not so much with the pupils who try hard but are unable to succeed as with those who simply fail to put forth an effort.

(2) Such pupils can be identified rather early and should be referred to guidance counselors for consideration. It is expected that they should be known by the first reporting period, that is, on or before November 15.

(3) Parents should be made aware of the problem as soon as possible after this date, either by letter or personal interview.

(4) The principal should advise the parent on or before January 10 that the pupil will not be permitted to remain in school after January 31st unless his effort improves.

(5) On January 31st a letter shall go from the principal to the parent advising of an enforced withdrawal of the pupil.

(6) Also on January 31st, the principal shall send to the Superintendent a list of all pupils who were asked to withdraw, together with data pertinent to their withdrawal.

(7) All border-line cases given the privilege of continuing after January 31st shall be considered as probationary students subject to later enforced withdrawal if there is a falling off of effort.

Thus the sequence of events which transpired following the student's assignment to this group was as follows:

(1) Along with a copy of the School Board's policy on laggard pupils a letter (see Appendix C), informing the student that he had been identified as a laggard, was sent to the student. The letter, besides explaining the present status of the student, also pointed





out future eventualities.

(2) On the same day, a letter (see Appendix D), indicating that the student had been placed on a list of laggard pupils, along with a copy of the School Board's policy on laggard pupils was sent to the parents.

(3) Following the Christmas examinations, the members of this group were placed into one of three categories\* and treated accordingly.

(a) No improvement - The parents of the students, classified in this manner, were sent letters (see Appendix E) in which they were told that since their child's Christmas marks had shown no improvement their son or daughter would remain on the list of laggard pupils. The parents were also informed that if the student's work showed no improvement prior to the end of January the student would be expelled from school.

(b) Very slight improvement - Some students were judged by their grade-coordinators to have made very slight but insufficient improvement. The parents of these students were sent letters (see Appendix F) which indicated that their children had shown some improvement and that further improvement would result in removal from the list of laggard pupils.

(c) Improvement - The parents of these students received letters

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\*In actual practice students tend to be divided about equally into these three groups.





(see Appendix G) which complimented the students on their improvement and besides encouraging the students to continue improving in their work, it informed them of their removal from the list of laggard pupils.

#### Treatment Given to Students in Group D

No contact was made with the students in this group from the time they took the pre-counseling tests to the end of the experimental period when they were asked to take the post-counseling tests. The students in this group, just as was the case with the students in the other three groups, were not told that their taking the tests had anything to do with underachievement. Prior to the testing, the students were told that the tester was interested in getting some information regarding adolescent beliefs, values, and attitudes. To keep the group as non-contaminated as possible, lists of the students in the group were given to the counselors and administrators, and the counselors were asked to refrain, if possible, from providing any counseling to these students for the duration of the experiment. Also, the administrators were asked to try and treat these students as much like non-laggard students in the school as possible. When checked at the end of the experimental period, it was found that the students had not received any counseling and that the administrators had not dealt with these students in any special way.



## Methods Used to Measure Effects of Differential Treatments

Outcomes were checked on the basis of changes in marks and irrational beliefs.

### Marks

The difference between the pre- and post-treatment aggregate achievement scores in normalized T score form was used to measure growth in academic achievement. Standardized test batteries could have been used as a measure of academic growth instead of teacher marks, but the latter was preferred because it was used as the original measure of achievement. Furthermore, as has already been pointed out (p. 7), school marks might be considered to be more sensitive an indicator of growth in academic achievement because they represent chiefly an assessment of current performance in a subject area, while standardized test scores might reflect total background. Also, even though teacher marks have the many weaknesses commonly ascribed to them, they are the accepted measure of success or failure (Kirchheimer, Axelrod, and Hickerson, 1949).

### The I-I Inventory (see Appendix H)

In Chapter II eleven major illogical and irrational beliefs which Ellis (1962) regards as presently omnipresent in Western civilization were presented. It will be recalled that the central hypothesis of Ellis' theory is that it is the foregoing kinds of





irrational beliefs which lead to negative emotion and that if a person is released from these fundamental irrational beliefs this release will lead to improved performance. An inventory was constructed to measure the extent to which a person possesses these irrational ideas.

The first step in constructing the Irrational Ideas Inventory was to assemble a pool of criterion-specific inventory items. The writing and selection of preliminary items was based upon the irrational beliefs presented by Ellis. Twelve to fifteen items were written with reference to each of the eleven major irrational beliefs. Following Gough's (1953) edicts regarding item writing, a major effort was made to ensure veridicality and authenticity of the items themselves as "no amount of analytical precision at some later time can overcome the limitations of an inept, superficial, or tangential pool of items" (p. 361).

The final form of the test contains 122 statements. Approximately one half of the statements are worded in such a way that agreement signifies irrationality and the other half are worded so that disagreement signifies irrationality. The responses are marked on a five point, graphic, Likert-type scale where the five points represent: strongly agree, agree, undecided, disagree and strongly disagree. These answers are weighted 5, 4, 3, 2, and 1 respectively, with 5 representing the greatest degree of irrationality. By summing the weights, a total test score can be derived for each individual.





### Reliability

A test-retest experiment with ninety-one subjects from Grades X, XI, and XII was performed to establish an estimate of the reliability. The period between the test and the re-test was approximately five weeks. The retest reliability coefficient of .80 for the total test is acceptable according to standard set by the American Psychological Association (Technical Recommendations, 1955).

### Validity

(a) Content validity - An attempt to gain content validity was made by preparing items that corresponded closely to Ellis' description of each irrational idea. A check on the extent to which the author was able to achieve content validity was made by having three judges acquainted with Ellis' writings on Irrational Ideas, independently label the 122 items according to what irrational belief they felt the items were measuring. The intercorrelations among the three judges and the author ranged from .75 to .85.

(b) Construct validity - The experiment carried out to establish construct validity was based on the assumption outlined earlier, that irrational ideas lead to negative emotion and disturbance and that irrational ideas are a partial cause of underachievement.

Six hundred and sixty high school students who completed the Inventory were divided, on the basis of discrepancy between scholastic capacity and achievement (procedure discussed on p. 28) into three



groups: overachievers, average achievers, and underachievers. The means and standard deviations for these three groups are presented in Table IV. The data from these three criterion groups were subjected to a one-way analysis of variance. The F ratio, as may be seen from Table V, is significant beyond the 1 per cent level of significance. Thus it may be seen that the three criterion groups, overachievers, average achievers, and underachievers respond to the I-I Inventory differently. Each of the means is significantly ( $p < .01$ ) different from the other two means. The underachieving students score highest while the average achievers score lowest. The hypothesis relating irrational ideas (as measured by the I-I Inventory) and achievement is therefore supported.\*

TABLE IV

MEANS AND STANDARD DEVIATIONS OF THE THREE  
CRITERION GROUPS ON THE I-I INVENTORY

Group	N	Mean	Standard Deviation
Underachievers	90	365.09	33.69
Average achievers	556	358.38	28.60
Overachievers	105	361.96	31.32

\*More statistical data regarding reliability, validity, and subtest intercorrelations are presented in Appendix I.





TABLE V

SUMMARY OF ANALYSIS OF VARIANCE OF THE SCORES ON THE  
I-I INVENTORY FOR THE THREE CRITERION GROUPS

Sources of Variation	Sum of Squares	Degrees of Freedom	Variance Estimate	Obtained F. Value	Significance
Between	3924.50	2	1962.25	4.65	$p < .01$
Within	315,556.01	748	421.86		

Hypothesis to be Tested

It is hypothesized that subsequent to the experimental period the group counseled according to the rational-emotive therapy orientation (Group A) will show more (1) improvement in school marks, and (2) reduction in degree or number of irrational beliefs than any of the other three groups.



## CHAPTER IV

### STATISTICAL TREATMENTS AND FINDINGS

The data accumulated from pre-treatment and post-treatment administrations of the measuring instruments used in this study were subjected to statistical analysis in an effort to ascertain the tenability of the hypothesis regarding the effects of the different treatments to which the underachieving adolescents were subjected. Since the hypothesis deals with two independent measures of behavior change, each of these will be dealt with separately.

#### Improvement in School Marks

The grades received on the Easter report card were summed for each student in the school and the distribution of the aggregate scores for each grade was normalized and standard score equivalents calculated. The achievement score in normalized T score form prior to the experiment was then subtracted from the achievement score in normalized T score form on the post-treatment or Easter marks for each of the 60 students involved in the experiment. Thus a positive difference means an improvement in academic standing and a negative difference means a regression. The means and standard deviations of these T score differences were calculated for each group and are presented in Table VI.



TABLE VI

MEANS AND STANDARD DEVIATIONS OF T SCORE DIFFERENCES  
BETWEEN PRE- AND POST-TREATMENT AGGREGATE  
ACHIEVEMENT SCORES FOR ALL FOUR GROUPS

Group	A	B	C	D
Means	6.67	4.20	4.07	.67
Standard Deviations	4.78	6.67	3.30	4.71

An analysis of variance of the T score differences was then performed to determine whether the observed differences were significant. A summary of the analysis of variance is presented in Table VII.

TABLE VII

SUMMARY OF ANALYSIS OF VARIANCE OF THE T SCORE  
DIFFERENCES BETWEEN PRE- AND POST-TREATMENT  
AGGREGATE ACHIEVEMENT SCORES DERIVED FOR  
THE EXPERIMENTAL AND CONTROL GROUPS

Sources of	Sum of Squares	Degrees of Freedom	Variance Estimate	Obtained F. Value	Signifi- cance
Between	273.4	3	91.1	3.39	$p < .03$
Within	1506.0	56	26.9		





As the F-ratio is significant beyond the 5 per cent level of significance, tests of the separate differences between means by the t-test were made. The results of these tests are shown in Table VIII.

TABLE VIII

SIGNIFICANCE OF DIFFERENCES BETWEEN MEANS OF THE  
T SCORE DIFFERENCES BETWEEN PRE- AND POST-  
TREATMENT AGGREGATE ACHIEVEMENT SCORES  
FOR ALL FOUR TREATMENT GROUPS

Groups	Differences Between Means	Significance
A - B	2.47	Not Sig.
A - C	2.60	Not Sig.
A - D	6.00	$p < .01$
B - C	.13	Not Sig.
B - D	3.53	Not Sig.
C - D	3.40	Not Sig.

Thus it can be seen that the hypothesis that Group A would show the greatest increase in achievement was at least partially upheld. However, in only one of the comparisons between Group A and the other three groups is the difference in means significant. The findings appear rather convincing that students who were counseled by the rational-emotive therapy orientation showed greater improvement in



school marks than did the group receiving no treatment (Group D). However, although the differences between Group A and the other two groups (Groups B and C) are in the direction hypothesized, they are not significant ( $p < .20$ ).

#### Reduction in Degree or Number of Irrational Beliefs

The I-I Inventory was administered before and after the experimental period to all the students involved in this study. The differences between the pre- and post-treatment scores were derived. The means and standard deviations of these differences were then calculated for each group and are presented in Table IX.

TABLE IX

MEANS AND STANDARD DEVIATIONS OF THE DIFFERENCES  
BETWEEN PRE- AND POST-TREATMENT SCORES ON THE  
I-I INVENTORY FOR ALL FOUR GROUPS IN THE STUDY

Group	A	B	C	D
Mean	7.80	.80	13.07	-8.13
S.D.	16.63	20.74	13.41	19.84

An analysis of variance was performed on the differences between pre- and post-treatment scores and a summary of the analysis of variance is given in Table X, page 51.





TABLE X

SUMMARY OF ANALYSIS OF VARIANCE OF THE DIFFERENCES  
BETWEEN PRE- AND POST-TREATMENT TOTAL TEST I-I  
INVENTORY SCORES

Sources of Variation	Sum of Squares	Degrees of Freedom	Variance Estimate	Obtained F. Value	Significance
Between	3788.7	3	1262.9	3.68	$p < .02$
Within	19205.5	56	343.0		

As the F-ratio is significant beyond the 5 per cent level of significance, tests of the separate differences between means were made by the t-test.

The results of these tests are shown in Table XI. From this table it is evident that Group A and Group C show change which is significantly different from that made by the no treatment group (Group D).

### Conclusions

Based upon all the data, obtained through pre- and post-counseling administration of evaluative measures, the following conclusions seem most plausible to the writer.

1. The group of underachieving students, counseled according to the rational-emotive therapy orientation (Group A), showed significantly greater improvement in school marks than did the untreated



TABLE XI

SIGNIFICANCE OF DIFFERENCES BETWEEN MEANS OF THE  
DIFFERENCES BETWEEN PRE- AND POST-TREATMENT  
TOTAL TEST SCORES ON THE I-I INVENTORY

Groups	Differences Between Means	Significance
A - B	7.00	N.S.
A - C	5.26	N.S.
A - D	15.93	$p < .05$
B - C	12.26	N.S.
B - D	8.93	N.S.
C - D	21.19	$p < .01$

group. However, as the rational-emotive therapy group (Group A) did not show significantly greater improvement in school marks than did either the group counseled by the more conventional approach to counseling underachieving students (Group B) or the group treated according to the "laggard pupil policy" (Group C), it must be concluded that the first part of the hypothesis is only partially upheld.

2. The group of underachieving students, counseled according to the rational-emotive therapy orientation (Group A), along with the group of underachieving students who were treated according to the "laggard pupil policy" (Group C), showed significantly greater reduction in irrational beliefs as measured by the I-I Inventory than



did the no treatment group. Again, as was the case with academic achievement, Group A did not significantly surpass either Group B or Group C and so the hypothesis that the group counseled by the rational-therapy orientation would decrease in irrational beliefs more than any of the other groups is only partially substantiated.





## CHAPTER V

### SUMMARY AND DISCUSSION

Two conclusions can be drawn from the results: firstly, the underachieving students, counseled according to the rational-emotive therapy approach, showed significant decrease in irrational beliefs and significant increase in academic achievement. Secondly, the underachieving students, treated by the "laggard pupil policy" approach, made significant changes on the first of these two variables. This is not strong support for the hypothesis.

Let us review the relationship, discussed in Chapter III, between a person's irrational beliefs and underachievement. It was argued, in the latter part of that chapter, that possession of irrational beliefs leads to a state of emotional disturbance and underachievement. It was then suggested that if one could become thoroughly released from irrational thinking, it would be exceptionally difficult for one to become too emotionally upset, or at best to sustain one's disturbance for very long. Furthermore, it was hypothesized that if a person was released from his irrational beliefs this would lead to improved performance in school.

From the above discussion it follows that an approach such as Ellis' rational-emotive therapy should, because of its emphasis on the reduction of irrational beliefs, assist high school underachievers to



improve in their academic performance. The fact that the group, counseled from a rational-emotive orientation, showed a decrease in irrational beliefs and an increase in marks would seem to support this line of reasoning. However, the group treated by the "laggard pupil policy" approach did not show a significant increase in marks. This indicates that a decrease in irrational beliefs, as measured by the I-I Inventory, does not necessarily parallel an increase in marks.

It is possible to conjecture that the I-I Inventory does not measure irrational beliefs satisfactorily and that the decrease by the rational-emotive therapy group or the "laggard pupil policy" group is a decrease in something other than irrational beliefs as envisaged by Ellis. Only limited evidence of validity was obtained.

Another finding which merits recall is the lack of increase in marks on the part of the group counseled by the regular counselors in the school. Although the main objective of the guidance program (with regard to underachieving students) in the school in which the study took place is to increase the students' academic performance, the changes brought about in these students were no different from the changes which occurred in the no treatment group.

Many counselors and psychotherapists would object to the findings of this study on the grounds that the study emphasized marks to the exclusion of other important outcomes. The question of adequate criteria to evaluate the outcome or effectiveness of counseling is certainly complex. Shoben (1953), for example, suggests that any





completely satisfactory evaluation of counseling should include evaluations of personal and social adjustment by the client, evaluations of self-concept and other personality dimensions, and evaluation of client satisfaction as well as evaluation of actual performance records such as marks. Whether or not the students in the study, counseled by either of the two counseling approaches, changed significantly on some of the criteria mentioned by Shoben (1953), is unknown.

A concluding statement about the lack of support of the hypothesis is in order. The most readily apparent conclusion is simply that rational-emotive therapy of underachievers is not effective. However, other alternatives cannot be ruled out. Factors such as the counselor's personality, his skill in applying techniques, and the number of counseling sessions may have been significant in the results obtained.



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## APPENDICES





## APPENDIX A

### S-E Index

The following is a copy of the socio-economic status scale used in this study.



1. Name: \_\_\_\_\_  

(Last Name)
(First Name)
2. Father's Occupation: \_\_\_\_\_  
 (Be clear. For example: Sales clerk at Eaton's door-to door  
 salesman for Fuller-Brush, travelling salesman for Massey-Ferguson)
3. Mother's occupation: \_\_\_\_\_
4. Do you ever use a language other than English in your home? \_\_\_\_\_  
 If you do,  
 (a) Name it here: \_\_\_\_\_  
 (b) Circle the words which tell how often you use it:  

Hardly Ever
Quite Often
Most of the time
5. About how long have you lived in Canada? \_\_\_\_\_

**DIRECTIONS:** In the following questions, mark your answer by putting a circle in the right place. For example, in the question "Does your family have a car?" draw a circle around the "Yes" if your family does have a car, and around the "No" if it does not. Be sure to answer all the questions.

- |  |     |    |
|--|-----|----|
| 1. Does your family own a car? . . . . .   | Yes | No |
| 2. Does your family have a garage or carport? . . . . .  | Yes | No |
| 3. Did your father go to high school? . . . . .  | Yes | No |
| 4. Did your mother go to high school? . . . . .  | Yes | No |
| 5. Did your father go to university? . . . . .   | Yes | No |
| 6. Did your mother go to university? . . . . .   | Yes | No |
| 7. Is there a writing desk in your home? . . . . .   | Yes | No |
| 8. Does your family have a Hi-Fi or record player? . . . . .   | Yes | No |
| 9. Does your family have a piano? . . . . .  | Yes | No |
| 10. Does your family get a daily newspaper? . . . . .  | Yes | No |
| 11. Do you have your own room at home? . . . . .   | Yes | No |
| 12. Does your family own its home? . . . . .   | Yes | No |
| 13. Is there an encyclopedia in your home? . . . . .   | Yes | No |
| 14. Does your family have more than 100 hard-cover books (4<br>shelves - 3 feet long.) . . . . .                   | Yes | No |
| 15. Did your parents borrow any books from the library in the<br>last year? . . . . .                              | Yes | No |
| 16. Does your family leave town each year for a holiday? . . . . .   | Yes | No |
| 17. Do you belong to any club where you have to pay fees? . . . . .  | Yes | No |
| 18. Does your mother belong to any clubs or organizations such<br>as study, church, art or social clubs? . . . . . | Yes | No |
| 19. Does your father belong to any such clubs or organizations? . . . . .  | Yes | No |
| 20. Have you ever had lessons in music, dancing, art,<br>swimming, etc., outside of school? . . . . .              | Yes | No |





## APPENDIX B

Below are summaries of four one way analyses of variance, one for each of four variables upon which the one experimental (Group A) and the three control groups (Groups B, C, D) were matched. The students who were left out because they were "unmatchable" are also compared.

(1) Socio-Economic Status

Sources of Variation	Sum of Squares	Degrees of Freedom	Variance Estimate	Obtained F. Value	Significance
Between	43.20	4	10.80	1.18	N.S.
Within	752.48	82	9.18		

(2) Scholastic Aptitude

Sources of Variation	Sum of Squares	Degrees of Freedom	Variance Estimate	Obtained F. Value	Significance
Between	180.41	4	45.15	.77	N.S.
Within	4811.16	82	58.68		



(3) Degree of Underachievement

Sources of Variation	Sum of Squares	Degrees of Freedom	Variance Estimate	Obtained F. Value	Significance
Between	78.48	4	19.62	1.36	N.S.
Within	1185.48	82	14.46		

(4) Actual Academic Achievement

Sources of Variation	Sum of Squares	Degrees of Freedom	Variance Estimate	Obtained F. Value	Significance
Between	67.91	4	16.98	.26	N.S.
Within	5342.58	82	65.15		



## APPENDIX C

NAME:

ROOM NUMBER:

You will find a copy of the School Board's policy on laggard pupils attached. Because of your results up until the latest report card, your name is being put on a list of laggard pupils and your parents are being informed of this fact. If you wish to interview me as a grade co-ordinator concerning this, please feel free to ask at the general office for an appointment.

Please note that this means that you are no longer eligible for school teams or other activities where you would represent the school as a whole.

Grade Coordinator.





## APPENDIX D

JASPER PLACE COMPOSITE HIGH SCHOOL  
Phone 489-4921 163 Street at 92 Avenue,  
Edmonton, Alberta.

Principal: B.T. Keller Ph.D.  
Vice-Principals: John Bibby B.Ed.  
H.W. Zingle M.Ed.

Re:

I attach a copy of the West Jasper Place School Board's policy on laggard pupils. It is the opinion of the grade coordinator that the above named student should be classed as a laggard pupil. You will note from reading the policy that the pupil has two additional chances to improve before being excluded from school. As a result of the Christmas exams the pupil will be advised by January 10th if his work has shown sufficient improvement, in which case his name is taken off this list; if his improvement has not been sufficient, he is warned that he has until January 31st to show real improvement. If none is shown by January 31st, the pupil will be advised that he is to withdraw from school and a letter will be forwarded to you, the parents. We sincerely hope that this last step will not become necessary.

Should you wish to discuss this action, please contact the undersigned and arrange for an interview.

Yours sincerely,

Grade Coordinator.



Section IV - J of the Policy Handbook, West Jasper Place S.D.

Indolent Pupils (High School)

A high school student is entitled to education at public expense provided he puts forth a serious effort to profit from that education. In 1959 the cost per senior high school pupil in Jasper Place was \$450.00 and there was difficulty in finding accommodation for all who sought admission. The public cannot afford to provide such service to pupils who take an indifferent attitude towards their responsibility in providing a good return on the investment.

In implementing the above policy, the following statements will apply:

1. Our concern is not so much with the pupils who try hard but are unable to succeed as with those who simply fail to put forth an effort.
2. Such pupils can be identified rather early and should be referred to guidance counsellors for consideration. It is expected that they should be known by the first reporting period, that is, on or before November 15.
3. Parents should be made aware of the problem as soon as possible after this date, either by letter or personal interview.
4. The principal should advise the parent on or before January 10 that the pupil will not be permitted to remain in school after January 31st unless his effort improves.
5. On January 31st a letter shall go from the principal to the parent advising of the enforced withdrawal of the pupil.
6. Also on January 31st the principal shall send to the Superintendent a list of all pupils who were asked to withdraw, together with data pertinent to their withdrawal.
7. All border line cases given the privilege of continuing after January 31st shall be considered as probationary students subject to later enforced withdrawal if there is a falling off of effort.





## APPENDIX E

JASPER PLACE COMPOSITE HIGH SCHOOL  
Phone 489-4921 163 Street at 92 Avenue,  
Edmonton, Alberta.

Principal: B.T. Keller Ph.D.  
Vice-Principals: John Bibby B.Ed.  
H.W. Zingle M.Ed.

The December marks of the above student do not indicate that there has been any improvement in effort. His/her name therefore remains on the list of laggard pupils. Towards the end of January the teachers will be asked for a confidential assessment of this student's work habits and effort since the time of the last report. If this assessment should show that there has still been no improvement, we will have no choice but to follow the policy, recommending his/her expulsion from school.

Yours sincerely,

Grade-Coordinator.



## APPENDIX F

JASPER PLACE COMPOSITE HIGH SCHOOL  
Phone 489-4921                      163 Street at 92 Avenue  
Edmonton, Alberta.

Principal:    B.T. Keeler Ph.D.  
Vice Principals:   John Bibby B.Ed.  
                         H.W. Zingle M.Ed.

The marks of the above student on the December report show that there has been some improvement in effort. However, this improvement is not yet sufficient to justify removing his/her name from the laggard list at this time. His/her effort will be reviewed by the teachers concerned towards the end of January. If there has been further improvement at that time, his/her name will be removed from the laggard list.

Yours sincerely,

Grade-Coordinator.



## APPENDIX G

JASPER PLACE COMPOSITE HIGH SCHOOL  
Phone 489-4921 163 Street at 92 Avenue  
Edmonton, Alberta.

Principal: B.T. Keeler Ph.D.  
Vice Principals: John Bibby B.Ed.  
H.W. Zingle M.Ed.

The marks of the above student on the December report indicate to us that he/she is now working closer to his/her ability and we are therefore pleased to inform you that his/her name has been removed from the list of laggard pupils. It is to be hoped that the improvement that has been shown so far will continue.

Yours sincerely,

Grade-Coordinator.





## APPENDIX H

### I-I Inventory

The following is a copy of an Irrational Ideas Inventory constructed by the author of this study for use in the study.



I-I INVENTORY

Name \_\_\_\_\_

Date \_\_\_\_\_ Grade \_\_\_\_\_

To The Student

This is a study of events and experiences in everyday life. You are asked to cooperate seriously and carefully in marking the items in this booklet. This is not an intelligence test. The best answer to each statement is your own first impression - there are no right or wrong answers.

Your answers will be treated with the strictest confidence and in no case will they be used to cause you any embarrassment.

INSTRUCTIONS FOR MARKING ANSWERS

For each statement, decide whether your answer is "Yes" or "No." If your answer is a definite "Yes" put an (X) on the end of the line where the "Yes" is typed. If your answer is a definite "No" put an (X) on the end of the line nearest the "No." If you are uncertain as to how you feel about the statement mark an (X) on the middle of the line. If the true answer is somewhere between the yes and no, put the (X) where it is most true for you.

Think carefully, but do not spend too much time on any one question. Let your own personal experience or opinion guide you to choose the answer you feel about each statement.

There is no time limit.

Please mark every item.





1. I would rather play by myself than with someone.

Yes                      ?                      No  
|                      |                      |  
\_\_\_\_\_

2. I prefer to get things done very quickly rather than being slow and sure in movement.

Yes                      ?                      No  
|                      |                      |  
\_\_\_\_\_

3. All human lives are equally sacred.

Yes                      ?                      No  
|                      |                      |  
\_\_\_\_\_

4. I usually object when a person steps in front of me in a line of people.

Yes                      ?                      No  
|                      |                      |  
\_\_\_\_\_

5. I have sometimes had a nickname which I didn't like very well.

Yes                      ?                      No  
|                      |                      |  
\_\_\_\_\_

6. I am afraid in the dark.

Yes                      ?                      No  
|                      |                      |  
\_\_\_\_\_

7. I prefer to accept suggestions rather than work them out for myself.

Yes                      ?                      No  
|                      |                      |  
\_\_\_\_\_

8. It is better to tell your troubles to your friends than to keep them to yourself.

Yes                      ?                      No  
|                      |                      |  
\_\_\_\_\_

9. Men are created equal in mental capacity.

Yes                      ?                      No  
|                      |                      |  
\_\_\_\_\_

10. It is necessary to be especially friendly to new students.

Yes                      ?                      No  
|                      |                      |  
\_\_\_\_\_

11. School promotions should be for intellectual merit alone.

Yes                      ?                      No  
|                      |                      |  
\_\_\_\_\_

12. I like to be praised.

Yes                      ?                      No  
|                      |                      |  
\_\_\_\_\_

13. It is foolish to let others see your emotions.

Yes                      ?                      No  
|                      |                      |  
\_\_\_\_\_

14. To spare the rod is to spoil the child.

Yes                      ?                      No  
|                      |                      |  
\_\_\_\_\_

15. I worry about little things.

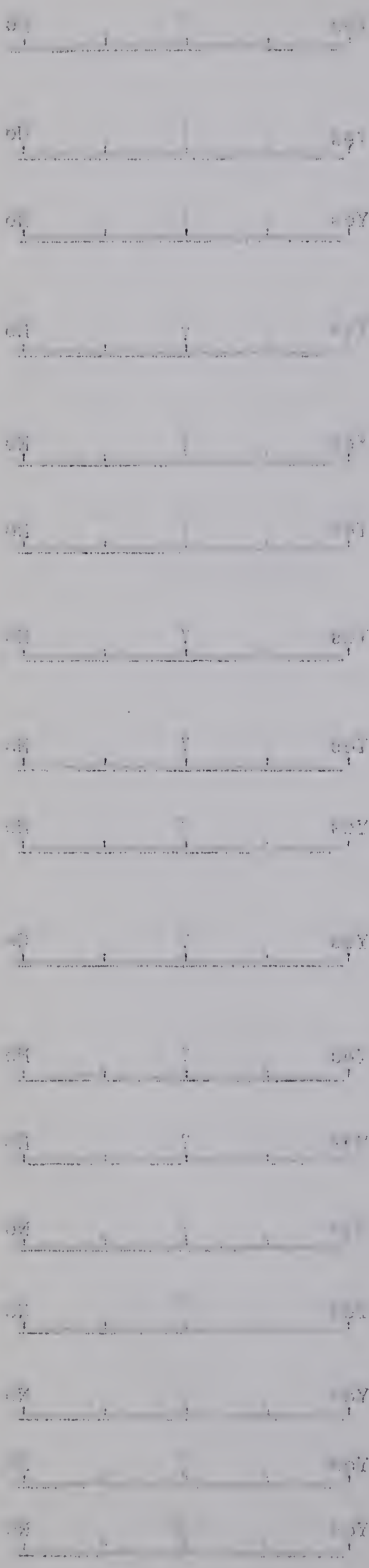
Yes                      ?                      No  
|                      |                      |  
\_\_\_\_\_

16. There are people who try to do me harm or hurt me.

Yes                      ?                      No  
|                      |                      |  
\_\_\_\_\_

17. I sometimes worry about my health.

Yes                      ?                      No  
|                      |                      |  
\_\_\_\_\_



1. I would rather play by myself than with someone else.

2. I prefer to stay alone than very crowded places. I like being alone and quiet.

3. All these things are really stupid.

4. I really don't like a person who is afraid of me.

5. I have sometimes had a feeling which is like a heavy weight.

6. I am afraid of the dark.

7. I prefer to be alone than with people. I like to be alone.

8. It is better to be alone than to be with people. I like to be alone.

9. I am really afraid of people.

10. It is better to be alone than to be with people. I like to be alone.

11. School presentation should be for the children.

12. I like to be alone.

13. It is better to be alone than to be with people.

14. It is better to be alone than to be with people.

15. To be alone is not to be alone.

16. I worry about little things.

17. There are people who are afraid of me.

18. I sometimes worry about the future.

18. Students should not be required to take courses for which they see no use.

Yes           ?           No

19. I like to bear responsibilities alone.

Yes           ?           No

20. It is a big aid to health to say each morning, "Day by day in every way I am getting better and better."

Yes           ?           No

21. Helping others is the very basis of life.

Yes           ?           No

22. Firm convictions make for strength of character.

Yes           ?           No

23. I feel that it is important to get on well with my teachers and principal.

Yes           ?           No

24. Will power is the most important trait.

Yes           ?           No

25. The "insanity plea" as a defence in murder trials is undesirable.

Yes           ?           No

26. I must learn to "keep my head" when things go wrong.

Yes           ?           No

27. I think that I am getting a square deal in life.

Yes           ?           No

28. It is useless to worry about things that cannot be changed or corrected.

Yes           ?           No

29. It is better to live a coward than die a hero.

Yes           ?           No

30. I prefer to have someone with me when I receive bad news.

Yes           ?           No

31. Some children are dull and unimaginative because of defective training in home and school.

Yes           ?           No

32. Sympathy is the most divine passion of the human heart.

Yes           ?           No

33. The good person is usually right.

Yes           ?           No

34. Sometimes I feel that no one loves me.

Yes           ?           No



1. Students should not be allowed to enter the room until they are called.

2. It is the duty of the teacher to maintain order in the classroom.

3. It is the duty of the teacher to maintain order in the classroom.

4. It is the duty of the teacher to maintain order in the classroom.

5. It is the duty of the teacher to maintain order in the classroom.

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15. It is the duty of the teacher to maintain order in the classroom.

16. It is the duty of the teacher to maintain order in the classroom.

17. It is the duty of the teacher to maintain order in the classroom.

35. I find it difficult to take criticism without feeling hurt.

Yes                      ?                      No  
|                      |                      |

36. We are justified in refusing to forgive our enemies.

Yes                      ?                      No

37. It is all right to create a scene in order to get ones own way.

[illegible]

38. Riches are a sure basis for happiness in the home.

Yes                      ?                      No

!                      !                      !                      !                      !

39. I worry over possible misfortunes.

Yes                      ?                      No

40. I have sometimes crossed the street to avoid meeting some person.

Yes                      ?                      No

|                      |                      |                      |                      |

41. I prefer to be alone.

Yes                      ?                      No

42. The boy who regularly stands at the foot of his class is often a great success after leaving school.

Yes                      ?                      No

|-----|-----|-----|-----|

43. I get disturbed when neighbours are very harsh with their little children.

Yes                      ?                      No

44. I find it easy to set standards of "right" and "wrong." Yes            ?            No

Yes                      ?                      No

45. Jeers humiliate me even when I know that I am right.

Yes                      ?                      No

|                      |                      |                      |                      |

46. Admiration gratifies me more than achievement.

Yes                      ?                      No

47. Punishment is a sure cure for crime.

Yes                      ?                      No

☐        ☐        ☒        ☐        ☐

48. I frequently feel self-conscious about my appearance.

Yes                      ?                      No

49. My feelings are easily hurt.

Yes                      ?                      No

|                      |                      |                      |                      |

50. Sometimes I am troubled by thoughts of death.

Yes                      ?                      No

|                      |                      |                      |                      |

51. If I were able to do so I would attend some other school than the one I am now attending.

Yes                  ?                  No

|-----|-----|-----|-----|



35. I find it difficult to read handwritten letters.  
 (writing down)

36. We are interested in knowing the results.

37. It is not right to say that I am not a  
 man of my own.

38. Nicholas was a very kind and helpful man.

39. I never saw anything like this.

40. I have sometimes spoken my mind to you  
 and you have been kind.

41. I would like to see you.

42. The two who are really kind at the end of the day  
 is often a great success when leaving home.

43. I am interested in your progress and very much with  
 your life's progress.

44. I find it easy to get a number of things in my mind.

45. I am interested in you and I hope that I can help.

46. I am interested in your progress and very much with  
 your life's progress.

47. I am interested in you and I hope that I can help.

48. I am interested in your progress and very much with  
 your life's progress.

49. I am interested in you and I hope that I can help.

50. I am interested in your progress and very much with  
 your life's progress.

51. I am interested in you and I hope that I can help.  
 I am interested in your progress and very much with  
 your life's progress.

- Yes                      ?                      No
- |                      |                      |                      |                      |
- \_\_\_\_\_

- Yes                      ?                      No
- |                      |                      |                      |                      |
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- Yes                      ?                      No
- '-----'

- Yes                      ?                      No

- Yes                      ?                      No
- |-----|-----|-----|-----|

- Yes                      ?                      No
- |-----|-----|-----|-----|

- Yes                      ?                      No

- Yes                      ?                      No
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- \_\_\_\_\_

- Yes                      ?                      No
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- Yes                      ?                      No
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- Yes                      ?                      No
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- Yes                      ?                      No
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- Yes                      ?                      No
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- Yes                      ?                      No
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- Yes                      ?                      No
- |                      |                      |                      |

21. I feel that the most important thing in life is to be happy.

22. I feel that the most important thing in life is to be healthy.

23. I feel that the most important thing in life is to be successful.

24. I feel that the most important thing in life is to be loved.

25. I feel that the most important thing in life is to be free.

26. I feel that the most important thing in life is to be honest.

27. I feel that the most important thing in life is to be kind.

28. I feel that the most important thing in life is to be brave.

29. I feel that the most important thing in life is to be patient.

30. I feel that the most important thing in life is to be gentle.

31. I feel that the most important thing in life is to be strong.

32. I feel that the most important thing in life is to be wise.

33. I feel that the most important thing in life is to be pure.

34. I feel that the most important thing in life is to be true.

35. I feel that the most important thing in life is to be good.

36. I feel that the most important thing in life is to be great.



68. This school places too much emphasis upon grades.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

69. The members of my family seem to criticize me a lot.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

70. I get very angry when I miss a bus which passes only a few feet away from me.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

71. I find that this school tends to make me unhappy.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

72. I can walk past a grave yard alone at night without feeling uneasy.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

73. I usually like to be somewhere else than at home.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

74. I enjoy being alone more than being with my classmates.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

75. A person who will not stand up for his rights as a teen-ager will probably not be able to stand up for his rights as an adult.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

76. Other people's problems frequently cause me great concern.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

77. Crime never pays.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

78. I wish that more affection were shown by more members of my family.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

79. I worry about tests.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

80. When I see movies about daring robberies, I usually hope the robber won't get caught in the end.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

81. When things are not the way I would like them to be, and it is not in my power to change them, I calmly accept things the way they are.

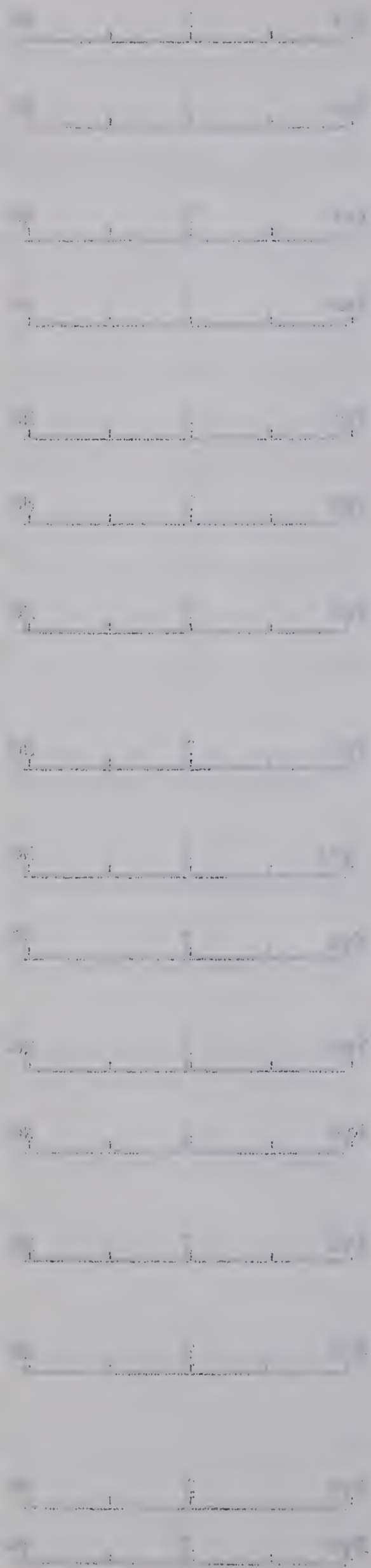
Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

82. I feel that life has a great deal more happiness than trouble.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

83. I can face a difficult task without worry.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐



1. A line passes through the points  $(-2, 3)$  and  $(4, -1)$ . Find the equation of the line in slope-intercept form.
2. A line passes through the points  $(-1, 5)$  and  $(3, -2)$ . Find the equation of the line in slope-intercept form.
3. A line passes through the points  $(0, 4)$  and  $(5, 0)$ . Find the equation of the line in slope-intercept form.
4. A line passes through the points  $(-3, 1)$  and  $(2, -4)$ . Find the equation of the line in slope-intercept form.
5. A line passes through the points  $(1, -2)$  and  $(-4, 3)$ . Find the equation of the line in slope-intercept form.
6. A line passes through the points  $(-5, 2)$  and  $(0, -1)$ . Find the equation of the line in slope-intercept form.
7. A line passes through the points  $(2, -3)$  and  $(-1, 4)$ . Find the equation of the line in slope-intercept form.
8. A line passes through the points  $(-2, 1)$  and  $(4, -5)$ . Find the equation of the line in slope-intercept form.
9. A line passes through the points  $(0, -2)$  and  $(3, 1)$ . Find the equation of the line in slope-intercept form.
10. A line passes through the points  $(-4, 3)$  and  $(1, -2)$ . Find the equation of the line in slope-intercept form.
11. A line passes through the points  $(1, 4)$  and  $(-2, -1)$ . Find the equation of the line in slope-intercept form.
12. A line passes through the points  $(-3, -2)$  and  $(0, 5)$ . Find the equation of the line in slope-intercept form.



84. I avoid inviting others to my home because it is not as nice as theirs.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

85. I prefer to be independent of others in making decisions.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

86. A juvenile delinquent will almost surely be a criminal when he becomes an adult.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

87. He that loses his conscience has nothing left that is worth keeping.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

88. It is better to have friends than fame.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

89. My folks appear to doubt whether I will be successful.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

90. I feel guilty when I misbehave and I expect to be punished.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

91. Sticks and stones will break my bones, but words will never hurt me.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

92. I tend to worry over possible troubles.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

93. Many of my classmates are so unkind or unfriendly that I avoid them.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

94. I tend to look to others for the kind of behavior they approve as right and wrong.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

95. If a child is brought up in a home where there is much quarreling and unhappiness he will probably be unhappy in his own marriage.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

96. People who unjustly criticize the government should be put in jail.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

97. When a friend ignores me I become extremely upset.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

98. If a person tries hard enough, he can be first in anything.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

44. I would like to see you in the future. It is not as if I am not interested.

45. I would like to see you in the future. It is not as if I am not interested.

46. I would like to see you in the future. It is not as if I am not interested.

47. I would like to see you in the future. It is not as if I am not interested.

48. I would like to see you in the future. It is not as if I am not interested.

49. I would like to see you in the future. It is not as if I am not interested.

50. I would like to see you in the future. It is not as if I am not interested.

51. I would like to see you in the future. It is not as if I am not interested.

52. I would like to see you in the future. It is not as if I am not interested.

53. I would like to see you in the future. It is not as if I am not interested.

54. I would like to see you in the future. It is not as if I am not interested.

55. I would like to see you in the future. It is not as if I am not interested.

56. I would like to see you in the future. It is not as if I am not interested.

57. I would like to see you in the future. It is not as if I am not interested.

58. I would like to see you in the future. It is not as if I am not interested.

99. The police may sometimes be right in giving a man the "third degree" to make him talk.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No

100. It hurts me when my friends are unkind.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No

101. I worry about the possibility of an atomic attack by some foreign power.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No

102. I often spend more time in trying to think of ways of getting out of something than it would take me to do it.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No

103. I feel my parents have dominated me too much.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No

104. I know there is a God.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No

105. I find it very upsetting when people who are important to me are indifferent to me.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No

106. When a person is no longer interested in doing his best he is done for.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No

107. The best way to teach a child right from wrong is to spank him when he is wrong.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No

108. It is impossible at any given time to change one's emotions.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No

109. I frequently do things that I am afraid of doing in order to prove to myself that there is nothing intrinsically frightful about these things.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No

110. I am happiest when I am sitting around doing little or nothing.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No

111. Cooperation is better than competition.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No

112. It is sinful to doubt the Bible.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No

113. It makes me uncomfortable to be different.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No





114. People who do not achieve competency in at least one area are worthless.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

115. People who perform acts which are immoral do so because they are too stupid or too ignorant to refrain from doing so.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

116. Unhappiness largely comes from within and is largely created by the unhappy person himself.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

117. I am naturally a lazy person.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

118. It is better to take risks and to commit possible errors, than to seek unnecessary aid of others.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

119. Persons who are punished for their "sins" usually change for the better.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

120. It would be terrible or catastrophic to be a cripple.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

121. I follow a definite study schedule during the school term.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐

122. Most people can be truly outstanding in at least one area of their work.

Yes ☐ ☐ ☐ ? ☐ ☐ ☐ No ☐



171. People who do not believe in the  
existence of God are called  
atheists.

172. People who believe in the  
existence of God and in the  
immortality of the soul are called  
theists.

173. People who believe in the  
existence of God and in the  
immortality of the soul and in the  
resurrection of the dead are called  
Christians.

174. People who believe in the  
existence of God and in the  
immortality of the soul and in the  
resurrection of the dead and in the  
eternal life of the soul are called  
believers.

175. People who believe in the  
existence of God and in the  
immortality of the soul and in the  
resurrection of the dead and in the  
eternal life of the soul and in the  
eternal happiness of the soul are called  
happy people.

176. People who believe in the  
existence of God and in the  
immortality of the soul and in the  
resurrection of the dead and in the  
eternal life of the soul and in the  
eternal happiness of the soul and in the  
eternal glory of the soul are called  
glorious people.

177. People who believe in the  
existence of God and in the  
immortality of the soul and in the  
resurrection of the dead and in the  
eternal life of the soul and in the  
eternal happiness of the soul and in the  
eternal glory of the soul and in the  
eternal love of the soul are called  
loving people.

178. People who believe in the  
existence of God and in the  
immortality of the soul and in the  
resurrection of the dead and in the  
eternal life of the soul and in the  
eternal happiness of the soul and in the  
eternal glory of the soul and in the  
eternal love of the soul and in the  
eternal peace of the soul are called  
peaceful people.

179. People who believe in the  
existence of God and in the  
immortality of the soul and in the  
resurrection of the dead and in the  
eternal life of the soul and in the  
eternal happiness of the soul and in the  
eternal glory of the soul and in the  
eternal love of the soul and in the  
eternal peace of the soul and in the  
eternal joy of the soul are called  
joyful people.

## APPENDIX I

## STATISTICAL DATA ON THE I-I INVENTORY

Reliability

Test-retest and internal consistency reliability coefficients, based on a sample of 91 subjects from grades X, XI, and XII, were computed and are reported in Table I-I. The test-retest coefficients were obtained by calculating Pearson product-moment correlations between two administrations of the I-I Inventory, which were administered five weeks apart. Internal consistency coefficients were obtained by application of Ebel's (1965; p. 328-330) approach which is based on analysis of variance.

Intercorrelations of Scores

Table I-II shows the intercorrelations of the eleven subtests. In general, the intercorrelations are low, with 40 out of 55 intercorrelations less than .20 and none above .50.

Construct Validity

Six hundred and sixty high school students who completed the I-I Inventory were divided, on the basis of discrepancy between scholastic capacity and achievement, into three criterion groups: over achievers, average achievers and underachievers. The data from the three criterion groups were subjected to a Multiple Discriminant Analysis (Kelly, Veldman and McGuire, 1964).



TABLE I-I  
RETEST AND INTERNAL CONSISTENCY RELIABILITY  
COEFFICIENTS FOR THE I-I INVENTORY

Subtest	Number of items	Retest Reliability Coefficient	Internal Consistency Coefficient
1	12	.81	.68
2	13	.61	.21
3	13	.53	.10
4	8	.66	.52
5	13	.65	.42
6	11	.79	.66
7	13	.76	.53
8	12	.65	.45
9	9	.46	.19
10	7	.74	.63
11	11	.65	.38
TOTAL TEST	122	.80	.50





TABLE I-II

INTERCORRELATIONS OF SUBTEST SCORES ON  
THE I-I INVENTORY

[illegible]



In Table I-III are summarized the means, univariate F tests, and scaled vectors for the eleven predictors which are the eleven subtest scores of the I-I Inventory. The discriminating power of the predictor test battery was determined through computation of Wilks' lambda, which is a function of the roots of  $W^{-1}A$ , where W is the pooled within-groups matrix of deviation cross products and A is the among-groups matrix of weighted group deviation cross-products (Cooley and Lohnes, 1962, pp. 117-118). This criterion measure of the effectiveness of discrimination was significant ( $F = 2.18$ ,  $df = 22/1476$ ,  $p < .002$ ). Chi-square tests (Rao, 1952, pp. 370-378) were computed for each of the two discriminant functions, to determine the significance of discrimination along each dimension separately. The chi-square test of significance for discrimination by the first dimension was significant beyond the .01 level, but the significance of the second vector did not approach acceptable levels of confidence ( $p < .30$ ). The first vector accounted for 74 percent of the predictable group variation.

Figure I-I includes the plot of the group centroids in discriminant space. The first discriminant vector effectively separates the three criterion groups. Vector II tends to separate the average achievers from the under and overachievers.



TABLE I-III

## MEANS, UNIVARIATE F TESTS AND SCALED VECTORS

	Means					Scaled Vectors	
	U A	A A	O A**	F*	P	I	II
Subtest 1	38.57	39.98	38.79	2.63	N.S.	.358	.147
Subtest 2	40.50	40.88	41.34	.66	N.S.	.050	.186
Subtest 3	36.08	36.77	37.27	1.48	N.S.	.054	.069
Subtest 4	23.69	24.14	23.91	.42	N.S.	.148	-.020
Subtest 5	33.27	32.45	32.21	.90	N.S.	.213	-.307
Subtest 6	28.46	30.05	30.41	2.22	N.S.	.347	.119
Subtest 7	33.09	31.94	29.40	9.71	.001	.208	-.486
Subtest 8	40.07	41.17	41.17	1.79	N.S.	.034	.393
Subtest 9	29.88	30.10	29.27	1.93	N.S.	.007	.021
Subtest 10	21.22	22.87	23.24	5.30	.01	.113	.226
Subtest 11	33.57	34.74	34.67	2.31	N.S.	.056	.247
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	N = 90	556	105				

\*Degrees of freedom are 2 and 748

\*\*UA underachievers

\*\*AA average achievers

\*\*OA overachievers





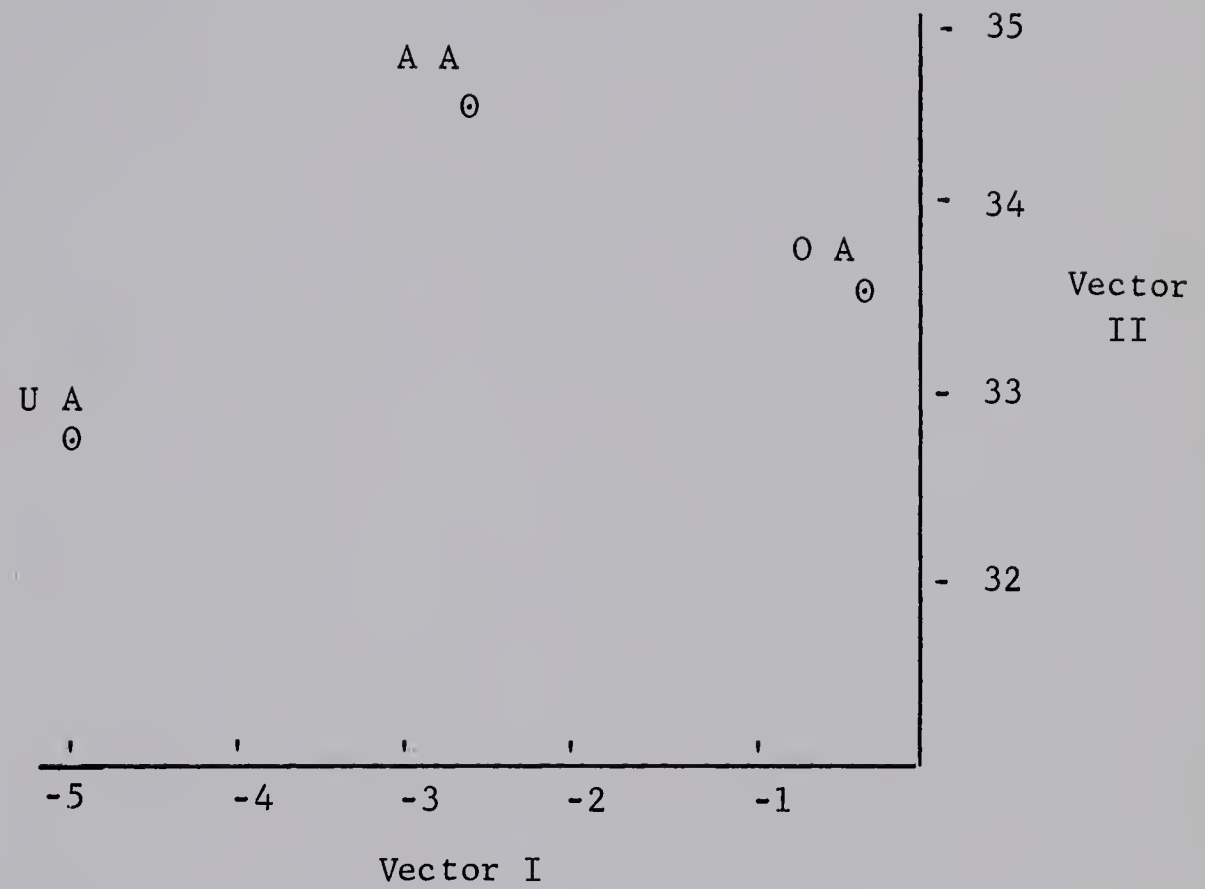


FIGURE I-I

GROUP CENTROIDS IN DISCRIMINANT SPACE





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